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Survey of Mexican Winter Vegetable Production

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FAS-M-3

MARCH 1956

F O R E W O R D

This survey, based on first-hand observations, is limited to the three areas producing fresh vegetables, principally for export to the United States. Fresh vegetables are produced along the West Coast of Mexico from Guaymas to Culiacan, in the States of Sonora and Sinaloa. The El Mante area is located in the State of Tamaulipas, west of Tampico, and 225 miles south of Monterrey. The Apatzingan area is located in the State of Michoacan, about 225 miles west of Mexico City, and 150 miles southeast of Guadalajara.

The acreage data has been converted from hectares to acres, and the money from pesos to dollars at the official rate of 12.50 pesos to the dollar. Mexican money is freely convertible at the official rate of exchange.

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S U M M A R Y

There is plenty of land available to increase acreage in all of Mexico's vegetable-producing areas. There is an oversupply of labor, and wage scale is very low. While there is a shortage of financing in Mexico and particularly for long-term credit, there are plenty of United States firms willing to risk capital for production as long as there are hopes for making a profit. Production equipment and supplies are not a problem, as most are imported from the United States and supplies are adequate.

It is the policy of the Mexican Government to discourage vegetables for export and to emphasize the expansion of sugarcane, wheat, cotton, rice, and livestock. The marketing service charges from harvest to delivery in a United States terminal market are high and offset the low production costs. The production hazards such as frosts, insects, and plant diseases, tend to keep the average yields per acre of exportable quality at low levels. Also, market prices in the United States and Canada are so low at times that a portion of the crop is abandoned.

In prior years, practically all of the vegetables in these areas were grown for export to the United States and Canada. The market demand in Mexican markets has increased sharply in the last two years. A large portion of the lower quality vegetables not suitable for export are now sold in the Mexican markets. This will tend to increase returns per acre and lower the production, harvest, and grading costs, which have previously been borne by the export shipments. Processing outlets for tomatoes are available on the West Coast, but are unprofitable on the tomatoes grown for export.

Growers and shippers usually stop shipping for export when United States and Canadian prices will not return marketing costs. However, losses are usually encountered before a grower will disband his harvesting and packing crews. In view of the high marketing costs, these losses can be extensive when there is a sharp break in prices.

The cantaloupe growers have not had this experience, but they will increase acreage until it does happen. It requires four days' shipping time to Laredo, Texas, and 5th to 7th morning delivery from Laredo to the more important northern United States and Canadian markets. A sharp break in prices can mean extensive losses on the cars in-transit.

It is likely that the acreage of vegetables, with the exception of cantaloupes, will trend downward. If the plant diseases on cantaloupes can be controlled, production in the Apatzingan area is likely to increase to the extent that melons can be profitably marketed in the United States and Canada. Also, honeydew melons look promising. Cantaloupe acreage on the West Coast of Mexico is likely to decline, primarily due to production hazards.

West Coast of Mexico

Geography and Climate.--Winter vegetables can be grown in all of the irrigated valleys of the West Coast of Mexico, from Guaymas to Culiacan. Vegetables are mostly grown along the coast, and at fairly low elevations. They can be grown earlier in the northern areas of Sonora, but the frost hazards are greater, and principally due to this fact, most of the vegetable acreage is now concentrated in Sinaloa. The principal points of production are Culiacan, Bamoa, and Los Mochis.

The principal weather factors are frosts and planting delays because of a prolonged rainy season in August and September, and rainy weather during the growing season. Since these areas are located in a subtropical climate, the effective control of insects and plant diseases are both expensive and difficult. Growers must apply insecticides and fungicides frequently. The use of chemical fertilizers started in the 1954-55 season, and increased substantially in 1955-56.

Production Facilities.--Practically all of the machinery, seed, insecticides and fungicides, and most of the fertilizers, are imported from the United States. Some of the fertilizer has been imported from Germany. Mexican shook, wrapping paper and labels, are used. However, the costs for these materials are about equal to the costs if they are imported. Growers are required to purchase the shook and paper in mid-August and pay interest charges at the rate of 12 percent per annum, plus storage costs, until the materials are used. If they underestimate their needs, they may be without packing materials, but if they overestimate, this expensive overhead must be carried another full year.

Competing crops in Sonora are cotton and wheat. In Sinaloa, the principal competing crops are sugarcane, wheat, rice, and cotton. The growers are quite anxious to further diversify their crops by growing and feeding livestock. Most of the vegetable growers plant other crops.

Despite the low wages of only 80 cents a day for farm labor, all growers stated that it paid to mechanize to the maximum extent possible. Nearly all of the land clearing is done by large crawler tractors, with some clearing done on contracts by operators from the United States. All growers have an abundant supply of heavy United States made machinery, including large crawler tractors and wheeled tractors, heavy disk plows, and sub-soilers. The soil is a heavy clay loam that requires much power to prepare and cultivate. Both tractor-mounted spraying and dusting and airplane dusting are done.

Transportation.--Transportation problems apparently have been largely solved. There is a good main highway from the lower West Coast of Mexico to Nogales, with the exception of a few bridges. Highway traffic is routed over the railroad bridges if the river floods over the road. The railroad has about completed dieselization of its line, and is regularly providing 40 to 48-hour delivery to Nogales from Culiacan. There were no complaints of transportation problems in the 1955-56 season. However, the lateral or farm-to-market roads are not surfaced, often becoming impassable after heavy rains. Growers often tax themselves to build or repair these roads.

There is a shortage of ice along the West Coast. The railroad does not provide ice in-transit, so it is necessary for the grower to provide his own. One grower has installed an ice plant with some storage capacity. This storage capacity, however, is inadequate for his own use. Late in the season when the weather is not, it is both difficult and expensive to obtain sufficient ice to cool the canteloupes and tomatoes.

Growers.--Mexican vegetable growers along the West Coast are efficient and follow good cultural practices. Prior to the early February freeze, their crops were in excellent condition. Their greatest problems are lack of skilled mechanics and lack of research for their particular production problems. Growers of all crops in the Culiacan area are taxing themselves to support research, and have established a 440-acre research farm near Culiacan. They have received the assistance and cooperation of both the State and Federal Governments. At present, research is largely limited to insect and plant-disease control, and to test plots to check varieties and application rates of fertilizers.

Growers generally look to the United States for new varieties, and for technical assistance. Some have attended schools in the United States, and have taken special short courses in California and Arizona. Growers in the more important production areas have formed local associations which are represented in an over-all West Coast Association known as the CAADES (Confederacion de Asociaciones Agricolas del Estago de Sinaloa).

Nearly all of the small growers have dropped out of vegetable production. The production of vegetables is now concentrated on large ranches, most of which grow from 200 to 1,000 acres of vegetables. It is not economical to produce high-quality vegetables on small acreages.

Government Assistance.--The Ministeries of Economics and Hydraulics limit the acreages in the Culiacan area. The first acreage allocation is for sugarcane, then other staple crops, such as wheat, rice, beans, and cotton. The remainder is allocated for fresh vegetables. The Grower Associations then allocate the acreage for vegetables among the individual growers. If a grower overplants his vegetable acreage, the water is shut off. The Association provides many services, and also has been granted certain police powers. It can require that vegetables for export meet certain minimum grade and size requirements. Also, if a grower "plates" or "stacks" a load, he is not permitted to export the particular lot, and is assessed a heavy fine by the Association. If such practices continue, he is permanently banned from exporting vegetables. The growers realize that only top-quality produce can compete in the United States markets, and they are trying to build up and maintain a reputation for high-quality produce.

Marketing Facilities.--Most Mexican growers make a financial and marketing arrangement with United States firms. Many of these firms have their headquarters or local offices at Nogales, Arizona. The telephone and telegraph service along the West Coast of Mexico is so poor that it would be virtually impossible to conduct trading from the Mexican shipping points. The Mexican grower generally needs financial and technical assistance from United States firms in producing and marketing his crop. Some growers will not assume all of the financial risk of production, even if they could arrange their own financing. They prefer to sell f.o.b.

Nogales. Cars are often held a day or two rather than permit an unsold car to cross the border. The growers pay all charges for crossing the border, including the United States duty, but the buyer pays the freight from the Mexican shipping point to destination.

Tomatoes.--About three-fourths of the vegetable acreage is planted to tomatoes, and nearly all of the tomato acreage is now concentrated in Sinaloa. In 1955-56, more than 80 percent of the total West Coast acreage is concentrated in the Culiacan irrigation district. The acreage is likely to become more concentrated as nearly all vegetables are now graded in central packing sheds.

Table I shows the acreage planted and the cars shipped for the past three seasons. Tables II and III show the acreage of the various vegetables grown in each of the production areas along the West Coast.

West Coast Mexican tomatoes are all grown under irrigation, and during the past two seasons the growers have started using fertilizers. This year some of the growers were trying liquid ammonia for the first time. The varieties grown in Florida are best adapted to the West Coast, and Mexican growers are quick to try all new varieties developed for Florida. All of the seed for planting is imported each year from the United States. The rows are spaced 9 to 10 feet apart, and the tomatoes are grown on a high ridge. Only one grower was experimenting with staked, vine-ripened tomatoes, and these were spaced in 4-foot rows.

Tomatoes are planted as soon as the land can be prepared in late September or October, and later plantings are made until December to stagger the marketing season. Tomatoes are marketed from December to June, with peak shipments generally in January and February. The tomatoes are picked in lugs or field crates and are stacked at the end of the rows. Some growers pad the lugs with corrugated paper. They are then hauled to a central packing shed. The roads from the field to the packing shed are generally rough and cause some bruising to the tomatoes.

Prior to this season, all of the tomatoes were hand-graded and sized. The sizes were irregular and there was much rough handling in the sorting process. A total of 17 modern grading machines are being installed for the 1955-56 season. The installation of a few had not been completed at the beginning of the season, but by next season they expect that all tomatoes will be graded and sized in central packing houses, using the latest grading, sizing and waxing equipment. Only a few tomatoes, however, are being waxed. The growers and shippers are well pleased with this equipment.

Most growers stated that an average of only 20 to 30 percent of the tomatoes picked graded 85 percent or better, U.S. No. 1. The No. 2 and cull tomatoes are either placed in crates and stacked outside the packing shed, or they are loaded into a dump truck. An increasing volume of these No. 2 and cull tomatoes are sold to Mexican buyers. The buyer furnishes his own crates and does whatever grading he wishes. This season, prices for these tomatoes have ranged from $.10 to $1.25 for a crate containing 60 to 65 pounds. The balance of the low-grade tomatoes are fed to cattle at no return to the packing shed.

Tomatoes for export are individually wrapped and placed in lugs averaging about 38 pounds gross. Standard sizes, such as 6x6 and 6x7 are used. Sizes within individual packages are uniform when a grading machine is used, and irregular when they are hand-sized.

The Association will not permit tomatoes grading less than 80 percent, U.S. No. 1, to cross the border at Nogales. Most of the cars shipped this season have graded 85 percent, U.S. No. 1, or better. The Florida tomato growers adopted a grade and size marketing agreement program beginning with the 1955-56 season. The recent Amendment to the Agricultural Marketing Act of 1937 requires all imported tomatoes to meet the grade and size regulations in effect for domestic tomatoes, and they must be inspected by the U.S. Federal or Federal-State Inspection Service. The grade and size regulation in effect this season has been U.S. No. 2, or better. The Mexican growers are well pleased with the marketing agreement approach, and they requested Florida growers to recommend an 80 percent, U.S. No. 1 regulation, when prices weakened.

The vine-ripened tomatoes are being packed in paper cups, and these are placed in 22-pound, 2-layer wooden flats. The top layer generally has the stems. These flats are immediately loaded in a refrigerated truck for shipment to the United States. The single grower now shipping vine-ripened stock is installing a hydro-cooling plant to quickly cool the tomatoes. Mexican buyers purchased all of the lower grade vine-ripened tomatoes at about $1.20 per 60-pound crate.

The marketing service charges are very high for the tomatoes exported. These charges include State production taxes, Federal export taxes, taxes and stamps on the freight bill, both Mexican and United States custom brokerage charges, and United States import duty. These charges are itemized in Table IV.

It is difficult to determine the cost of production, because of the many variables involved. There is a wide variation in yield per acre, even on the same farm, depending upon the time of planting, weather and marketing conditions. When market prices in the United States drop to a low level, the entire crop or the last portion of the field, may be abandoned. Growers generally stated that a good yield is 125 packed lugs per acre. Yields may vary from 0 to 200 lugs per acre.

The 1953-54 season was average or better, and growers exported 90 lugs per acre. There was a lot of frost and flood damage during the 1954-55 season, and exports averaged only 58 lugs per acre. Due to frost damage in early February 1956, it is likely that lugs exported per acre will be below the previous poor season.

It appears that production costs for the better growers range from about 40 to 65 cents per packed lug for export. These costs do not include harvest and packing costs. If demand from the Mexican markets continues to improve, it will tend to decrease the production and harvest costs which are now borne by the tomatoes for export.

Cantaloupes.--Practically all of the cantaloupes are grown in the Culiacan and Bamoa areas. Most of the cantaloupes are shipped during April and May. In the 1955-56 season, some growers had planted early enough for

March shipment, but a frost in early February heavily damaged all of the early plantings.

Melon growing is extremely hazardous, and the yields vary from 0 to 125 crates per acre. In 1953-54, an average of 62 crates were exported per acre, and only 27 crates during the 1954-55 season. There was extensive frost damage last season and again in the 1955-56 season. Cost of production varies from $.50 to $2.25 a crate, depending on the grower's luck with yields.

The melons are usually packed in central sheds under the supervision of experienced packers from the United States. Some growers hire packers from the United States and pay them the standard rate per crate in the southwestern cantaloupe areas, plus travel to and from Mexico. The cantaloupes are top-iced with crushed ice, and it is necessary to place enough ice in the car at the shipping point to cool the melons and carry them to Nogales. There are no intermediate icing stations on the railroad. If there is a large melon crop, it is very difficult to obtain sufficient ice to carry the melons to Nogales.

The market for cantaloupes, both in the United States and Mexico, has been good. All growers who have made good yields have made nice profits. Frost and rains, however, have damaged a sufficient acreage to the extent that a number of growers have discontinued cantaloupe production. Aside from frost and mildew, damage from rats is the next greatest hazard. The rats may eat the seeds at planting time, and they often damage the mature melons before harvest. They migrate from the sugarcane fields and from the desert to the melon fields. Itemized marketing costs are shown in Table IV.

Watermelons.—The watermelon acreage is about equally divided between Sonora and Sinaloa. Most of the acreage in Sinaloa is concentrated around Culiacan. The watermelons are generally marketed in late April and May. The quality of the melons has been generally good, and growers received a satisfactory return during the 1954-55 season. Watermelons are popular in the Mexican markets, and the demand is increasing.

Peppers.—Most of the peppers are grown in the Rio Mayo area in Sonora. The production of sweet peppers has been declining, primarily due to plant diseases and poor market prices. A number of growers have switched to the production of hot peppers for the Mexican market. The marketing charges for peppers are shown in Table IV.

El Mante

Geography and Climate.--El Mante is about 250 feet above sea level. Most of the vegetables are grown on land a few feet higher than the irrigated sugarcane land. The rainy season generally ends in August or early September. The soil is a heavy black clay loam, which is underlain with a limestone shale. This soil varies in depth, but the tomatoes are generally grown in shallow soils.

There is very little rainfall after the end of the rainy season. However, in some seasons there is too much rain during the growing season,

making it virtually impossible to control blight. The best tomatoes are grown in dry seasons. Also, there are occasional frosts during the winter months.

Production Facilities.--There is plenty of land available for tomatoes. However, tomatoes can be grown only two to three years on the same land; then it is necessary to shift to new land. It is quite expensive to clear new land, which generally sells for $80 an acre. Most of the machinery, trucks and grading machinery, is imported from the United States. The wire-bound crates are imported, and the lugs and wrapping paper are Mexican made. All of the seed is imported from the United States.

The principal crops competing with tomatoes are sugarcane and vegetables for the Mexican markets, corn, and beans.

Transportation.--There are no transportation problems. Practically all of the tomatoes for export are trucked to the border and all those sold on the Mexican market are transported in motor trucks. Most of the tomatoes are shipped December through February and no refrigeration is needed.

Growers.--There are many small growers planting about 20 acres of tomatoes, and a few planting several hundred acres. The growers in this area are not as well organized as those on the West Coast. They have grower associations, but no one association represents the entire area.

Marketing Facilities.--The grading facilities are adequate, but the telephone and wire service is poor. The growers and shippers are handicapped in not having written confirmation of sales transactions.

Tomatoes.--The only important vegetable grown in this area for export is tomatoes. Many other vegetables are grown for sale in the Mexican markets. The tomatoes are planted as soon as possible after the rainy season, which usually ends in late August or early September. The seed beds cannot be prepared when the soil is either wet or dry. Tomatoes must be set in the fields in late September or early October. Later plantings will not produce a crop. It seldom rains during the growing season, yet the soil holds sufficient moisture to carry the plants to about the end of February. The plants are spaced about 3 feet apart in 6 or 7-foot rows. It is necessary to spray the fields about 4 times with a fungicide.

Tomatoes are generally grown on the same land for 2 or 3 years. Then it is necessary to shift to new land in order to control fusarium wilt. There appears to be plenty of land suitable for tomatoes that can be cleared. Most of the land clearing is done by hand, as bulldozing certain types of trees mixes the top soil and subsoil. When this occurs, the soil is unsuitable for tomatoes.

Since the tomatoes are grown without irrigation and without any fertilization, this is a very low-cost production area. Most growers estimate the production cost of a 60-pound crate of tomatoes, grading 80 percent U.S. No. 1, or better, to average about 40 cents. This does not include harvest and packing costs. The farm wage scale in this area is now 56 cents a day. Yields per acre average about 50 to 70 crates.

Since the planting season cannot be extended, the marketing season usually extends from December through February.

There is only one large central packing shed with modern grading and mechanical sizing attachments. However, there are a number of small packing sheds equipped with mechanical sizing machines. Most of the tomatoes are packed in 60-pound wire-bound crates, although a few lugs are packed. A few growers ship their tomatoes to Brownsville, Texas, for grading and packing. Most of the packed tomatoes for export are shipped to Laredo, Texas, by motor truck.

The cost of a 60-pound crate of tomatoes, f.o.b. Laredo, is about $3.61, with the costs as follows: Production cost, 40 cents; crate, 59 cents; packing, 7 cents; freight, El Mante to Laredo, 28 cents; duties, custom brokerage, Mexican export taxes and other incidental costs, $1.90; selling commission, 35 cents; and Tamaulipas State tax, 4 cents.

Practically all of the No. 2 and cull tomatoes can be sold in the Mexican markets. Since this area is only about 360 miles from Mexico City, they have a decided advantage in this market over the West Coast areas. Up to the end of January, Mexican buyers paid from 48 cents to $3.50 for a crate containing 60 to 65 pounds of tomatoes, with the trucker furnishing the crates and doing his own grading and packing. They will pay a high premium for vine-ripened tomatoes. In one field, Mexican buyers had employed a crew to go over the fields picking pink tomatoes.

The growers and shippers perform no services for the Mexican buyers. They dump the No. 2 and cull tomatoes together in crates and set them outside the packing shed in the direct sun and heat, which damages the tomatoes. At very little extra expense, these tomatoes could be more efficiently handled so that damage to them would be minimized. Growers and shippers could improve the demand for pinks and other pick-outs by more careful handling of the tomatoes destined for Mexican markets.

El Mante growers and shippers are well pleased with the Florida Marketing Agreement and with the required U.S. Federal-State inspection before the tomatoes can cross the border. Their primary criticism is that the Florida growers should have recommended a higher grade regulation when prices weakened. While they do not have a growers association such as the West Coast that prohibits the shipment of No. 2 tomatoes in export markets, they are of the opinion that marketing No. 2's in the United States does not pay. A few No. 2 tomatoes were shipped in mid-January when prices advanced sharply, but most of the growers considered this a serious mistake.

Apatzingan

Cantaloupes are the only vegetable grown for export in this area. However, this season about 250 acres of honeydew melons have been planted. This is a relatively new area in cantaloupe production. Last year they planted about 7,000 acres, and increased to 14,500 acres in 1955-56. The melons are grown under irrigation with water supplied from wells which are about 80 feet deep.

There is little or no frost damage in this area. Plant diseases, particularly mildew, is very difficult to control. Apparently the future of this area depends on the growers' ability to control diseases. The older the area becomes in cantaloupe production, the more difficult it will be to control diseases and insects.

The Mexicans in this area are inexperienced, both in growing and in marketing. Technical and financial assistance are being furnished by firms from the United States. Most of the melons are grown in partnership with the Mexican growers, but under close supervision of technicians representing United States firms. Failure to adhere to a timely and scientific schedule of applying insecticides and fungicides could result in a complete loss of the crop. Plantings are staggered in an effort to extend the marketing season from mid-February through May. Most of the melons must be marketed before the beginning of the Texas and California marketing seasons.

Transportation.—The melons are shipped by rail from Apatzingan. The first cars are shipped by express on passenger trains. When the volume is sufficient, they are shipped by special freight trains.

There is a shortage of rail facilities, including sidings at loading points, locomotive power for moving the cars, and icing facilities are completely lacking in the production area and on the railroad. It requires from 15 to 30 thousand pounds of top-ice, which must be supplied at the loading point. Most of the ice is shipped in refrigerated cars from Monterrey and Laredo, Texas. This ice is stored in the cars until it is used. If ice is not available, the melons cannot be shipped. If the shipper fails to use sufficient ice at the loading point, the melons will be over-ripe when they reach Laredo. In most instances, over-ripe cars are a total loss because of a lack of sufficient marketing outlets in the vicinity of Laredo.

Marketing.—In late January 1956, growers estimated that with average weather for the balance of the season, the production of exportable melons would be about 3,000 cars. However, they did not think that actual export shipments would exceed 2,000 cars. This limitation will be largely due to a lack of transportation facilities, including a shortage of ice.

The highest quality melons are exported to the United States and Canada. The lower quality melons, and those too ripe for export, are sold in the Mexican markets. There is a good demand for all of the lower-grade melons in the Mexican markets.

The marketing costs for cantaloupes exported to the United States are very high, but cannot be stated exactly. The United States duty is 35 percent ad valorem. The value is usually determined by the final sales price at the terminal market, less all marketing charges from shipping point to destination, which includes freight, ice, brokerage charges, duty, selling costs at destination, and drayage.

There is a wide variation in the icing charges, because the shipper purchases ice in Monterrey and Laredo, and possibly at other points, and pays the shipping costs and absorbs the shrinkage losses prior to

icing the cars. Different quantities of ice are used, depending on the shipper's evaluation on the amount of ice needed to maintain the proper temperature to Laredo, which is the first point where cars can be re-iced. If the shipper underestimates the amount of ice needed, the cantaloupes may be a total loss at Laredo.

Most shippers use, as a rule of thumb, a cost of $6.00 per crate to place the cantaloupes in an f.o.b. Laredo, Texas, position. This includes the cost of grading and packing, ice, freight to Laredo, custom brokerage costs, the duty, and f.o.b. selling brokerage. This cost will vary some, depending on the duty paid, the amount of ice used, and a few other incidental costs. The express costs from Apatzingan to Laredo were $1.21 per crate, and from Laredo to New York $1.70 per crate during the 1954-55 season. This would make a crate of cantaloupes cost $7.70 for marketing service charges from Apatzingan to New York, leaving no return for the production of the cantaloupes; it does, however, include grading, packing, and cost of the crate.

TABLE I

WINTER VEGETABLES: Planted acreage in Mexico, grown principally for export to the United States and Canada, 1953-56, and carlot shipments, 1953-55, by area and commodity

Area and commodity	Acreage planted			Carlot shipments	
	1953-54	1954-55	1955-56	1953-54	1954-55
	- Acres -			- Cars -	
West Coast					
Tomatoes.....	40,900	38,122	39,581	5,702	3,361
Bell peppers.	5,900	5,447	2,525	570	183
Peas.....	2,100	2,625	1,934	233	214
Cantaloupes..	4,037	3,863	4,445	942	365
Watermelons..	1,350	4,674	4,621	259	618
Squash.....	-	162	-	-	-
Cucumbers....	-	237	-	-	5
Snap beans...	-	175	181	119	-
Miscellaneous vegetables.	250	750	-	-	-
El Mante					
Tomatoes.....	16,800	1/7,900	1/6,000	286	171
Apatzingan					
Cantaloupes..	-	7,000	14,500	347	938
Honeydews....	-	-	250	-	48

1/ Acreage reduction was partially due to unfavorable weather at planting time.

Source: The Ferrocarril del Pacifico, S.A. de C.V., and grower-shipper estimates.

TABLE II

VEGETABLE and MELON ACREAGE: West Mexican, by state and district, 1954-55

State and district	Tomatoes	Peppers	Peas	Canta-loupes	Water-melons	String beans
	- - - Acres - - -					
Sonora						
Ortiz.....	-	-	-	-	300	-
Santa Rosa.	-	-	-	150	925	-
Maytorena..	-	-	-	-	125	-
Empalme....	350	74	-	-	250	-
Cd. Obregon	2,000	-	-	-	-	-
Rio Mayo...	3,750	750	1,750	-	-	-
Total....	6,100	824	1,750	150	1,600	-
Sinaloa						
Los Mochis.	4,137	1,825	175	375	-	-
Verdura....	324	50	-	-	-	-
Bamoa.....	2,600	474	700	1,450	100	-
Guamuchil..	774	100	-	500	250	-
Retes.....	-	-	-	-	750	-
Caimanero..	-	-	-	-	500	-
Vitaruto...	1,125	50	-	-	125	-
Culiacan...	22,525	2,124	-	1,388	1,349	175
Obispo.....	125	-	-	-	-	-
Rosario....	412	-	-	-	-	-
Total....	32,022	4,623	875	3,713	3,074	175
GRAND TOTAL..	38,122	5,447	2,625	3,863	4,674	175

Source: The Ferrocarril del Pacifico, S.A. de C.V.

TABLE III

VEGETABLE and MELON ACREAGE: West Mexican, by state and district, 1955-56

State and district	Tomatoes	Peppers	Peas	Canta-loupes	Water-melons	String beans
	- - - Acres - - -					
Sonora						
Ortiz.....	-	-	-		618	-
Santa Rosa.	-	-	-	247	618	-
Maytorena..	-	-	-	-	494	-
Empalme....	247	-	-	-	-	-
Piedra.....	74	25	-	-	-	-
Cd. Obregon	370	-	-	-	-	-
Rio Mayo...	988	98	1,490	-	-	-
Total....	1,679	123	1,490	247	1,730	-
Sinaloa						
Los Mochis.	1,976	1,581	197	-	-	-
Bamoa.....	2,947	-	247	617	-	-
Guamuchil..	-	-	-	-	247	-
Retes.....	-	-	-	-	185	-
Caimanero..	-	-	-	-	185	-
Vitaruto...	375	-	-	-	-	-
Culiacan...	32,110	821	-	3,581	2,274	181
Obispo.....	494	-	-	-	-	-
Total....	37,902	2,402	444	4,198	2,891	181
GRAND TOTAL..	39,581	2,525	1,934	4,445	4,621	181

Source: The Ferrocarril del Pacifico, S.A. de C.V.

TABLE IV

MARKETING SERVICE COSTS
from harvest at Culiacan to Chicago
during the 1954-55 season

Charges	Canta-loupes	Tomatoes	Bell peppers
	Dollars per car 1/		
Railroad stamps and taxes (Mexican)	39.11	37.80	33.97
Consular invoice and certification	3.50	-	-
Special services: U.S. Customs House	1.07	2.38	2.30
Mexican Customs	-	5.76	-
Handling charge	-	-	.25
Labor for inspection and weighing charges	2.00	-	4.00
United States duty	552.30	322.80	484.88
Mexican duty, ad valorem, and export tax	172.73	70.41	66.51
Ice supplied at Nogales, Arizona:			
3,500 pounds crushed ice	21.42	-	-
Ice at shipping point	60.00	-	-
Sinaloa Confederation charges	30.00	19.50	20.25
Labor consumption entry and documents	3.50	3.50	3.50
Vegetable Distributors' Association dues	1.00	1.00	1.00
United States Customs Brokers' commission	10.00	10.00	10.00
Mexican Customs Brokers' commission	3.23	3.74	3.02
Sinaloa production tax	11.85	19.76	19.05
Labor at Nogales, Sonora, for inspection	3.48	2.00	-
Special services	1.74	1.00	6.31
United States grade inspection	8.00	8.00	8.00
Selling commission at Nogales	100.00	97.50	100.00
Freight, Culiacan to Chicago	435.12	548.34	399.60
Total	1,460.05	1,153.49	1,162.64
	Crate	Lug	Crate
Average cost per package	5.07	1.76	2.58
Harvesting, grading, packing, and crates	1.55	.65	.80
Total marketing costs to Chicago	6.62	2.41	3.38

1/ Cars were calculated at 288 crates of cantaloupes, with a billing weight of 68 pounds; tomatoes at 650 lugs, billing weight 38 pounds; and peppers at 450 crates, billing weight 40 pounds. The freight from Culiacan to Chicago is $2.22 per hundred pounds, but does not include a rate increase of 7 percent scheduled to become effective February 25, 1956. United States duties are: cantaloupes 35 percent ad valorem; peppers 2-1/2 cents per pound; tomatoes 1.8 a pound November 15 to end of February, and 2.1 a pound March 1 to July 14.

Source: Shippers' bills-of-lading and grower-shipper estimates on costs of harvesting, grading, packing, and cost of crates.